

**ABSTRACT**

The invention provides a mammalian mucinase capable of hydrolyzing mucus. The mucinase is among others suitable for counteracting diseases in which mucus is involved. The diseases comprise cystic fibrosis, COPD, asthma, bronchitis, tuberculosis, tumors with altered mucus expression, and mucus-containing pathogens. The invention also provides a pharmaceutical composition comprising an effective amount of the mucinase and a method of therapeutic or prophylactic treatment of an individual against a disease in which mucus is involved. Methods for obtaining the mucinase are also herewith provided, as well as nucleic acids encoding (part of) the mucinase. In one aspect, the invention provides a diagnostic kit comprising a mucinase, a mucinase-specific antibody, a mucinase-derived peptide and/or nucleic acid encoding (part of) the mucinase.